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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In the Application	LOWENSTEIN, M.)	
of:)	Group Art Unit: MMC2/0430
)	
on:	ELECTRICAL)	Examiner: HUYNH, K.
	FILTER/PROTECTOR, AND)	
	METHODS OF)	
	CONSTRUCTING AND)	
	UTILIZING SAME)	
)	
Serial No.:	08/422,360)	
)	
Filed On:	4/17/95)	

Commissioner for Patents
Washington, D.C. 20231

DECLARATION OF RUDOLPH J. KRAUS

I, Rudolph J. Kraus, hereby declare and state as follows:

1. I am employed by Data Support Associates (DSA) as CEO. DSA is a Representative Marketing Firm specializing in equipment to support continuous operation of critical computer facilities. The companies we represent supply premium products to ensure power quality for our customers. Over the past few years I have taken it upon myself to become familiar with every power quality enhancing technique available on the market. I have studied intensively all the technologies available to prevent electrical system problems caused by harmonic currents.

2. The term "INVENTION" as used herein means the devices defined by the following claims 22, 26, 29, and 39:

"22. In a multiple phase electrical system for supplying power from an AC source to one or more nonlinear loads connected to at least one phase line therein, a device for substantially eliminating currents in a neutral wire, said device comprising:

a first completely-passive parallel resonant circuit having three passive electrical branches connected in parallel;

said first completely-passive parallel resonant circuit is tuned to a third harmonic frequency of a fundamental frequency of said AC source; and

said three passive electrical branches comprise a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

26. A device according to claim 22, wherein:

each phase line of said multiple phase electrical system supplies power to an associated one of said nonlinear loads;

said device includes a second completely-passive parallel resonant circuit and a third completely-passive parallel resonant circuit;

each of said first, second and third completely-passive parallel resonant circuits is connected along a separate phase line of said multiple phase electrical system in series with at least one of said nonlinear loads whose power is supplied by said separate phase line; and

each of said first, second and third completely-passive parallel resonant circuits is tuned to said predetermined harmonic frequency of said fundamental frequency of said AC source.

29. A device for substantially eliminating a predetermined harmonic current generated by a nonlinear load in an electrical distribution system which distributes power from an AC source, said device comprising:

a completely-passive parallel resonant circuit connected in series with said nonlinear load;

said completely-passive parallel resonant circuit comprises three completely-passive electrical branches;

said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of a fundamental frequency of said AC source to change the current drawn by said nonlinear load; and

said three completely-passive electrical branches comprise a first branch consisting of a capacitor, a second branch consisting of a reactor, and a third branch consisting of a resistor.

39. A device for reducing currents in an electrical system which supplies power to a nonlinear load from an AC source, comprising:

a completely-passive parallel resonant circuit connected in series with said nonlinear load;

said completely-passive parallel resonant circuit comprises three completely-passive electrical branches;

said completely-passive parallel resonant circuit is tuned to a third harmonic frequency of said AC source to change the current drawn by said nonlinear load;

a housing member for said completely-passive parallel resonant circuit; and

means for connecting the nonlinear load to said completely-passive parallel resonant circuit.”

3. In particular I have examined closely the INVENTION utilized by Harmonics Limited, LLC (which is the assignee of the above-identified patent application), a device for substantially eliminating a predetermined harmonic current generated by a nonlinear load in an electrical distribution system which distributes power from an AC source.
4. I thoroughly understand how the INVENTION operates, which is unique to the industry because of the way it operates, actually preventing harmonic currents from flowing instead of removing them after they are in the system. Because of this, DSA has selected Harmonics Limited as one of the premier companies that we represent.
5. Harmonics Limited's technology utilizing the INVENTION blocks the formation of harmonic currents in the electrical distribution system. It uses a parallel-resonant tank circuit in series with the harmonic-current producing load. This tank circuit, tuned to the 3rd harmonic, has a near infinite impedance at that frequency and therefore will not permit 3rd harmonic currents to flow anywhere in the distribution system. Thus these damaging harmonic currents are never formed in the system and, therefore, do not have to be removed. All other technologies attempting to reduce harmonic current flow in a distribution system operate by absorbing, tolerating, or canceling the 3rd harmonic current after it is present and flowing in the system. These technologies do not remove harmonic current from the entire system, but only from the point where they are connected back to the transformer. These technologies dissipate the harmonic currents as heat, which must be removed from the facility at extra cost.

6. My firm first became associated with Harmonics Limited in 1996. At that time we contracted to represent products utilizing the INVENTION along the Eastern seaboard. It quickly became apparent that the Harmonics Limited products utilizing the INVENTION would be a major commercial success in the power quality market and we contracted to represent these products worldwide. Since 1996 our firm has sold more than 4.2 million dollars worth of units. Once design engineers understand the features of the Harmonics Limited products utilizing the INVENTION, they seldom consider using any of the competing technologies for solving harmonic problems. The essential difference between the INVENTION and other technologies is that the INVENTION incorporates a circuit that prevents formation of harmonic currents. It is the application of this circuit that makes the Harmonics Limited products so valuable and unique in the marketplace.
7. DSA's sales of harmonic suppression systems utilizing the INVENTION have been approximately as follows.

<u>Year Sold</u>	<u>Approximate Retail Dollar Value</u>
1996	98,971
1997	219,970
1998	562,243
1999	1,043,061
2000	2,318,946
Total to date	4,243,191

8. DSA's sales of Harmonic Limited Harmonic Suppression Systems utilizing the INVENTION are increasing and I expect this trend will continue. The action of the INVENTION to prevent formation of harmonic currents, rather than treating them

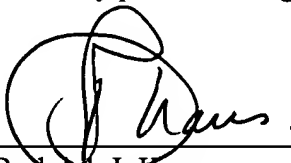
after they are formed, is the main reason we are having such success selling Harmonics Limited products.

9. DSA's sales of Harmonic Limited products utilizing the INVENTION are not the result of extensive advertising. In fact, the INVENTION is not the type of product that can be sold by advertising hyperbole, and Harmonics Limited has conducted minimal advertising in connection with this technology. Rather, the purchasers of this technology are sophisticated electrical and maintenance engineers who base purchasing decisions on functionality and performance. Harmonics Limited's products utilizing the INVENTION are sold by us by dealing directly on a one-to-one basis with the engineers responsible for computer center design and operation. DSA provides potential customers with literature, live demonstrations, and testimonial data. A demonstration of harmonic suppression by the INVENTION, particularly when compared with competing technologies, leaves no doubt that this unique technology is superior in every way.
10. Harmonic Limited's products utilizing the INVENTION are more expensive than competing technologies; therefore the commercial success, and our customers' reason for purchasing this technology, is not due to aggressive pricing or discounts. Once we explain to engineers how the INVENTION works, they clearly realize that the extra cost of equipment from Harmonics Limited utilizing the INVENTION is offset by superior operation and benefits.
11. The commercial success of equipment from Harmonics Limited utilizing the INVENTION is attributable to the unique way it operates, the prevention of harmonic

current flow rather than removal of harmonic currents after they are formed in the system.

12. I declare that all statements made herein of my own knowledge are true and all statements made on information and belief are believed to be true; and, further, that these statements were made with the knowledge that willful false statements and the like are punishable by fine or imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful false statements may jeopardize the validity of the above-identified application and any patent issuing thereon.

Dated: 10 Aug-01



Rudolph J. Kraus